AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A method for manufacturing a GaN-based light-emitting diode (LED), comprising the steps of:

providing a substrate;

forming a GaN semiconductor epitaxy layer on said substrate, said GaN semiconductor epitaxy layer further comprising an n-type GaN contact layer, a light-emitting layer and a p-type GaN contact layer, said light-emitting layer being a light-emitting source;

forming a digital penetration layer on said p-type GaN contact layer, said digital penetration layer having functions of a p-type ohmic contact layer and high transmittancy with respect to light emitted by said light-emitting layer;

~~using a mutli-step dry etching method to etch said digital penetration layer, said p-type GaN contact layer, said light-emitting layer to form an n-metal forming area, etching terminating at said light-emitting layer;~~

etching said digital penetration layer, said p-type GaN contact layer, and said light-emitting layer to form an n-metal forming area and expose a portion of said light-emitting layer as an n-type ohmic contact layer;

etching said light-emitting layer and said n-type GaN contact layer to form a trench in said n-metal forming area for separating a p/n junction area;

forming a first ohmic contact electrode on said digital penetration layer for said p-type ohmic contact layer;

forming a second ohmic contact electrode on said n-metal forming area for said n-type ohmic contact layer; and

forming pads on both said first ohmic contact electrode and said second ohmic contact electrode~~; and~~

~~forming a protective layer on said p/n junction area~~.

2. (Currently Amended) The method as claimed in Claim 1, wherein said digital penetration layer is formed with one of the following methods: metal organic chemical vapor deposition (MOCVD), molecular beam epitaxy (MBE), and liquid phase epitaxy (LPE).

3. (Currently Amended) The method as claimed in Claim 1, wherein said digital penetration layer is made of $Al_xIn_yGa_{1-x-y}N_zP_{1-z}$ and $Al_pIn_qGa_{1-p-q}N_rP_{1-r}$ with increasing (10Å-90Å) and decreasing (90Å-10Å) thickness, respectively, where $0<x,y,z,p,q,r<1$, and [[its]] conductivity type of said digital penetration layer can be either p-type, n-type, or I-type.

4. (Original) The method as claimed in Claim 1, wherein said light-emitting layer emits light with wavelength between 380nm and 560nm, and the optical transmittancy of said digital penetration layer with respect to said wavelength is greater than 80%.

5. (Original) The method as claimed in Claim 1, wherein said first ohmic contact electrode is made of Indium Tin Oxide (ITO).

6. (Currently Amended) The method as claimed in Claim 1, wherein said first ohmic contact electrode has [[the]] thickness between 1000Å-4000Å.

7. (Original) The method as claimed in Claim 1, wherein the distance between said first

ohmic contact electrode and said substrate is greater than the distance between said second ohmic contact electrode and said substrate.

8. (Currently Amended) The method as claimed in Claim 1, wherein said second ohmic contact electrode is made of one or a combination of materials selected from the group consisting of ~~the following materials or their combination:~~ Ti, Al, Au, Ni, In, Sn, Zn, Cr, Cu, W, Pt, Pd, ITO, Indium Oxide, Tin Oxide, [[or]] and Aluminum Zinc Oxide.

9. (Currently Amended) The method as claimed in Claim 1, wherein each of said pads is made of one or a combination of materials selected from the group consisting of ~~the following materials or their combination: of~~ Ti, Al, Au, Cr, Ni, and Pt.

10. (Currently Amended) The method as claimed in Claim 1, wherein said n-metal forming area ~~formed by a dry etching method has the depth of~~ has depth between 1000Å-3000Å.

11-14. (Cancelled).

15. (Currently Amended) The method as claimed in Claim [[14]] 1, wherein said trench is approximately ~~created by said multi-step dry etching method has the width of~~ 0.2mm wide.